

SECTION 15855

DIFFUSERS, REGISTERS, AND GRILLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. This Section includes ceiling mounted, wall-mounted and "in-duct" mounted supply-air diffusers, return-air and exhaust-air registers, and grilles.
- B. Related Sections include the following:
 - 1. Division 15, Section 15820, "Duct Accessories" for fire and smoke dampers and volume-control dampers not integral to diffusers, registers, and grilles.
 - 2. Division 15, Section 15990, "Testing, Adjusting, and Balancing" for balancing diffusers, registers, and grilles.

1.3 REFERENCES

- A. American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc. (ASHRAE)
 - 1. ASHRAE 70 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- B. National Fire Protection Association (NFPA)
 - 1. NFPA 90A (1996) "Installation of air Conditioning and Ventilation Systems".

1.4 DEFINITIONS

- A. Supply-Air Diffuser: Circular, square, or rectangular supply-air distribution outlet, generally located in the ceiling or mounted directly in an exposed ductwork. Diffuser may comprise of air-deflecting members that can discharge supply-air in various directions and planes and arranged to promote mixing of primary air with secondary room air.
- B. Supply-Air, Return-air or Exhaust-Air Register: A volume damper controlled grille that may be an inlet or outlet assembly over the air opening.
- C. Grille: A louvered or perforated covering for an opening without volume damper control in an air passage. A grille may be located in a sidewall, ceiling, or floor.

1.5 SUBMITTALS

- A. Product Data: For each model indicated, include the following:
 - 1. Data Sheet: For each type of air outlet and inlet, and accessory furnished; indicate construction, finish, and mounting details.
 - 2. Performance Data: Include throw and drop, static-pressure drop, and noise ratings for each type of air outlet and inlet.
 - 3. Schedule of diffusers, registers, and grilles indicating drawing designation, room location, quantity, model number, size, and accessories furnished.
 - 4. Assembly Drawing: For each type of air outlet and inlet indicate materials and methods of assembly of components.

- B. Samples for Verification: Of diffusers, registers, and grilles, in manufacturer's standard sizes, showing the full range of colors. Prepare Samples from the same material to be used for the Work.

1.6 QUALITY ASSURANCE

- A. NFPA Compliance: Install diffusers, registers, and grilles according to NFPA 90A, "Standard for the Installation of Air-Conditioning and Ventilating Systems."

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

- A. Air-Diffuser, Register and Grille type, size, capacity, materials, finish, mounting and accessories are as indicated on drawings.
- B. Scheduled Air Outlet designations: In order to establish the basis of design without concise generic descriptions, specific manufacturer and their model numbers are used to identify diffuser, register and grille criteria. Other available manufacturers' product intended to be considered if "approved equal".
- C. Available Air outlet Manufacturers are:
 - 1. Titus
 - 2. Metal*Aire
 - 3. Anemostat
 - 4. Krueger
 - 5. Hart & Cooley Inc: Tuttle & Bailey Division
 - 6. Carnes Co. Inc.
 - 7. Nailor Industries

2.2 SOURCE QUALITY CONTROL

- A. Testing: Test performance according to ASHRAE 70, "Method of Testing for Rating the Performance of Air Outlets and Inlets."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas where diffusers, registers, and grilles are to be installed for compliance with requirements for installation tolerances and other conditions affecting performance of equipment. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install diffusers, registers, and grilles level and plumb, according to manufacturer's written instructions, Coordination Drawings, original design, and referenced standards.
- B. Ceiling-Mounted Outlets and Inlets: Drawings indicate general arrangement of ducts, fittings, and accessories. Air outlet and inlet locations have been indicated to achieve design requirements for air volume, noise criteria, airflow pattern, throw, and pressure drop. Make final locations where indicated, as much as practicable. For units installed in lay-in ceiling panels, locate units in the center of the panel. Where architectural features or other items conflict with installation, notify Construction Manager for a determination of final location.

- C. Install diffusers, registers, and grilles with airtight connection to ducts and to allow service and maintenance of control or balancing dampers and fire dampers.

3.3 ADJUSTING

- A. After installation, adjust diffusers, registers, and grilles to air patterns indicated, or as directed by Construction Manager, before starting air balancing.

3.4 CLEANING

- A. After installation of diffusers, registers, and grilles, inspect exposed finish. Clean exposed surfaces to remove burrs, dirt, and smudges. Replace diffusers, registers, and grilles that have damaged finishes.

3.5 AIR-OUTLET SCHEDULES

- A. Air-Diffuser, Register and Grille type, size, capacity range, materials of construction, finish, mounting and accessories are as scheduled on drawings.
- B. Coordinate finish and mounting of air-outlets with architectural drawings where applicable.

END OF SECTION 15855